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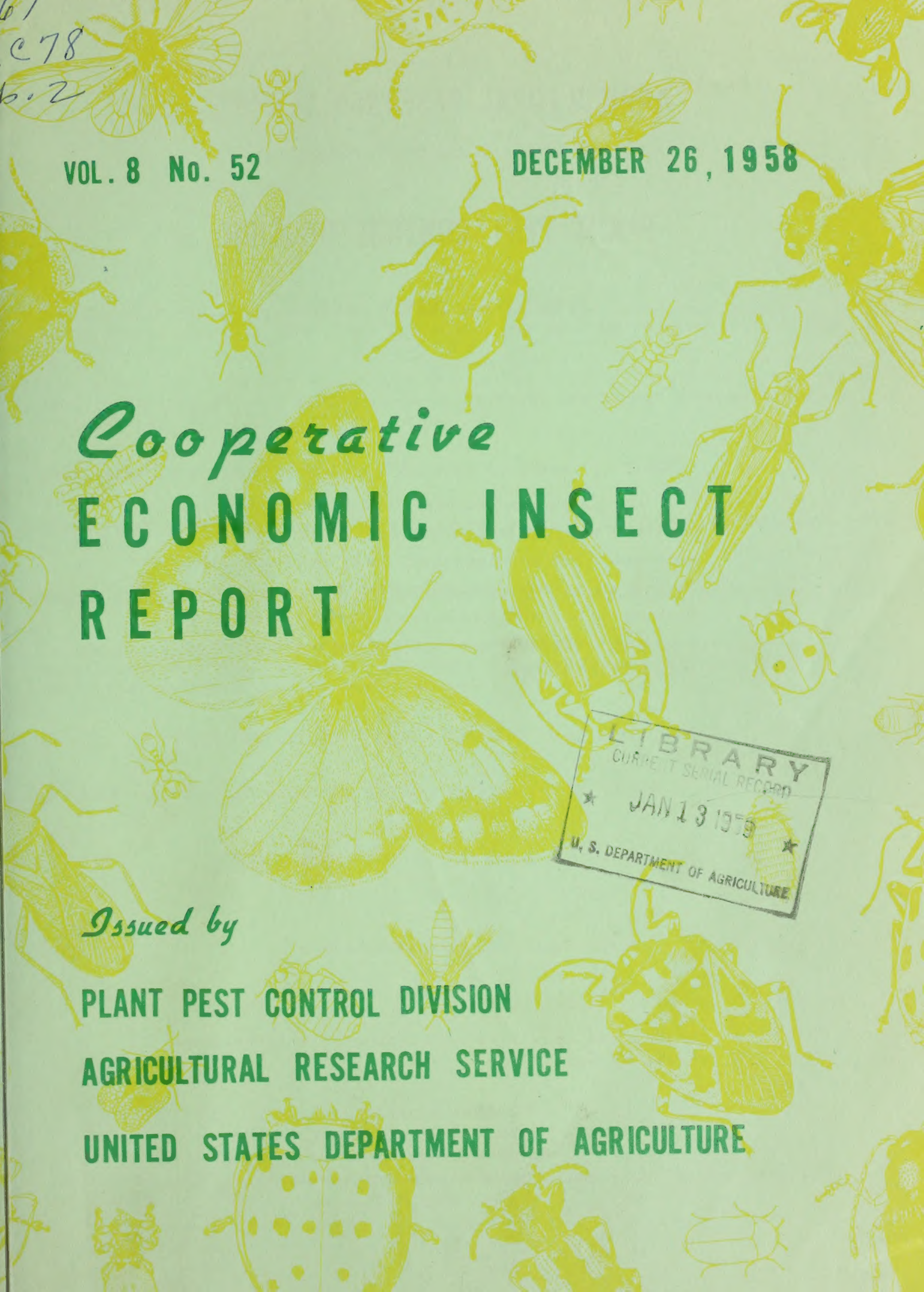

VOL. 8 No. 52 DECEMBER 26, 1958

Cooperative
ECONOMIC INSECT REPORT

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PLANT PEST CONTROL DIVISION
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

PLANT PEST SURVEY SECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

A RICE DELPHACID (Sogata orizicola) was collected for the second time at Belle Glade, Florida. The first collection was made during the fall of 1957. (p. 1021).

SPOTTED ALFALFA APHID still persists in Oklahoma and Kansas despite freezing weather. (p. 1021).

First MEXICAN FRUIT FLY of season trapped in Texas. (p. 1022).

GREEN PEACH APHID appeared about two months early in Dade County, Florida. (p. 1022).

KHAPRA BEETLE infestation reported in Riverside County, California. (p. 1023).

INSECT DETECTION: Pink bollworm collected for first time in Cleburne and Mississippi Counties, Arkansas. (p. 1022). Imported fire ant reported for first time in Horry County, South Carolina. (p. 1024).

SUMMARY OF INSECT CONDITIONS - 1958 - Illinois (p. 1025).

INSECTS not known to occur in the United States. (p. 1029).

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Reports in this issue are for the week ending December 19, unless otherwise designated.

WEATHER OF THE WEEK ENDING DECEMBER 22, 1958

Mainly of interest this week were the variations in the circulation pattern which developed welcome changes in the weather for some sections of the country. In California, where seasonal precipitation has been considerably below normal, a trailing front passing over the Pacific coastal area brought light to moderate rain to the northern two-thirds of the State and light snowfall to the central and northern Sierras. The widespread flow of Arctic air funneling into the country east of the Divide was interrupted for several days at the beginning of the period as a series of rather intensive low pressure disturbances moved along the Canadian Border. Temperature conditions in the central and northern Great Plains moderated considerably, except in the extreme northeastern section. Subzero minima that characterized the picture most of the last period were replaced during midweek by readings in the 20's and 30's. Farther to the east in New York, many locations observed the first above-freezing weather they have had since the 6th of the month. Weekly average temperatures for the most part were above normal over the western half of the Nation, and below normal over the East. The line dividing these conditions extended generally from southeastern New Mexico into southeastern Missouri and thence northwestward into central North Dakota. Greatest departures were +15° in north central Montana, and -13° at Sault Ste. Marie, Michigan, Burlington, Vermont, and Atlantic City, New Jersey. Daily record-high temperatures were observed on several dates and at several locations in California, with Fresno recording on the 15th an all time high of 75.9°F for the month of December. In contrast, southeastern sections of the country remained relatively cold most of the week. Freezing minimum temperatures were recorded on several nights as far south as the middle Gulf Coast and on the 18th and 19th into northern Florida.

Precipitation for the week was confined mainly to the northern half of the country, except for coastal Texas and Florida. Most falls were light, the main exceptions being coastal sections of the Northwest, and areas near Corpus Christi and Galveston, Texas and Miami, Florida. Moderate amounts were observed in the extreme northern Great Lakes region and along the coast of Maine, as a result of snows which occurred during the passage of storm centers over that area. The southern limit of the snow cover receded northward during the week and now generally extends from southwestern North Dakota to northern West Virginia, and thence northeastward to the northern New England coast. Snow cover has melted over most of the wheat section in Washington, but 1 to 2 inches still remain in the Big Bend area. Ice was reported thicker than usual for this time of year in Wisconsin with 12 to 21-inch measurements being observed in northern sections, and 9 to 10-inch measurements in southern areas. (Summary supplied by U. S. Weather Bureau.)

CEREAL AND FORAGE INSECTS

CHINCH BUG (Blissus leucopterus) - OKLAHOMA - Annual cooperative chinch bug hibernation survey conducted in 50 counties during December 3-16. Lincoln County had very severe rating (2,000 or more per square foot), and Cleveland, Hughes, McClain, Okfuskee and Seminole Counties rated severe (1,000 to 2,000 per square foot). Counts in other counties were lower. (Coop. Sur.).

GREENBUG (Toxoptera graminum) - OKLAHOMA - Averaged 0-7 per linear foot in scattered fields of fall-seeded wheat in central area. (VanCleave, Washum, Pennington). Light infestations found in fields in Fairview area. (Wood). INDIANA - Non-economic to light infestations in wheat fields in Knox County, November 6. (Deay, Osmun, Matthew).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - OKLAHOMA - Averaged 0-12 per linear foot some fields of wheat in central area. (VanCleave, Washum, Pennington). Light in wheat fields in Fairwiew area. (Wood).

GRASSHOPPERS - TEXAS - Egg surveys in 10 counties bordering eastern New Mexico and the western panhandle counties in Oklahoma in general confirmed the results of the adult survey. (PPC, Sou. Reg., Nov. Rpt.).

A RICE DELPHACID (Sogata orizicola) - FLORIDA - The second specimen was collected on October 20 in the Belle Glade area. The first specimen was collected in this same area in the fall of 1957. Determinations made by J. P. Kramer. TEXAS - Surveys in Chambers, Colorado, Jefferson, Liberty and Orange Counties have been negative. MISSISSIPPI - All specimens collected in the delta counties during survey in October have been negative. One inspection in Pearl River County also negative. Fourth treatment of two infested rice plantings in Hancock County completed during November. (PPC, Sou. Reg., Nov. Rpt.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - KANSAS - Populations ranged from 205 to 1,826 per 5 plants in north central area and from 427 to 652 per 5 plants in Riley and Pottawatomie Counties in northeastern area. (Simpson, Burkhardt). OKLAHOMA - Moderate to heavy infestations continue in alfalfa in central area despite sub-freezing temperatures and snow during the preceding weekend. (VanCleave, Washum, Pennington). Cold and snow of past week has not materially reduced populations in check fields in Stillwater area. (Bieberdorf).

SOYBEAN CYST NEMATODE (Heterodera glycines) - VIRGINIA - Delimiting surveys were initiated on November 17 in Nansemond County at the two known infested sites. (PPC, East. Reg.). Surveys were made on 40 acres in ALABAMA, 1,667 acres in ARKANSAS, 385 acres in GEORGIA, 406 acres in MISSISSIPPI, 734 acres in NORTH CAROLINA, and 847 acres in TENNESSEE during November. No newly infested counties were found, but two properties in North Carolina and one in Tennessee were found infested. All other inspections were negative. (PPC, Sou. Reg., Nov. Rpt.).

FRUIT INSECTS

COTTONY-CUSHION SCALE (Icerya purchasi) - CALIFORNIA - Light infestations on lemon trees in Folsom, Sacramento County. (Cal. Coop. Rpt.).

YELLOW SCALE (Aonidiella citrina) - CALIFORNIA - Heavy infestations on orange trees in Folsom, Sacramento County. (Cal. Coop. Rpt.).

MEDITERRANEAN FRUIT FLY (Ceratitis capitata) - Total of 13,070 traps in operation at end of November in FLORIDA. Trapping continued in ALABAMA, LOUISIANA, MISSISSIPPI and TEXAS. All specimens trapped in Florida negative: no suspicious specimens collected in other States. (PPC, Sou. Reg., Nov. Rpt.).

MEXICAN FRUIT FLY (Anastrepha ludens) - TEXAS - The first adult for the season, a male, was trapped in an orange grove 7 miles west of Hidalgo County on November 24. A total of 112 properties were trapped over the three citrus-producing counties using 2,084 traps. (PPC, Sou. Reg., Nov. Rpt.).

TRUCK CROP INSECTS

GREEN PEACH APHID (Myzus persicae) - FLORIDA - Adults and immature stages averaged 0 to 25 per leaf on potatoes northeast of Homestead, Dade County on December 5. Det. D. O. Wolfenbarger. The first aphids were observed in 1957 the latter part of December. They are about 60 days ahead of their usual appearance. (Fla. Coop. Sur.).

CABBAGE LOOPER (Trichoplusia ni) - FLORIDA - Averaged 1 per 12 linear foot of row in potatoes east and north of Homestead, Dade County. Reported as heaviest infestation noted so early on potato plants. Controls being applied. Infestations spotted on December 5, but may become general. (Wolfenbarger, Dec. 5).

WHITE-FRINGED BEETLES (Graphognathus spp.) - NEW JERSEY - Total of 721 acres of sweetpotatoes surveyed in Vineland, Landisville and Newfield areas during November. No specimens found. (PPC, East. Reg.).

GOLDEN NEMATODE (Heterodera rostochiensis) - NEW JERSEY - Samples processed in Middlesex County during November negative. (PPC, East. Reg.).

COTTON INSECTS

PINK BOLLWORM (Pectinophora gossypiella) - Positive collections were made in Cleburne and Mississippi Counties, ARKANSAS, for the first time. Inspections in ALABAMA, MISSISSIPPI and TENNESSEE were all negative. In OKLAHOMA, 56,929 acres were found infested for the first time. In TEXAS, lint cleaner inspections were made in 72 counties, averaging 49.05 pink bollworm larvae per inspection. (PPC, Sou. Reg., Nov. Rpt.). CALIFORNIA - During the week ending December 12, 1,045 bushels of gin trash were inspected in Kern and Imperial Counties. This phase of detection will be terminated on December 12. Lint cleaner inspections in 8 counties totaled 1,205 inspections. Blacklight traps were operated in 4 counties where cotton is still in the field aggregating 297 light nights. Green boll inspection in Kern County accounted for 1,800 bolls from 2,290 acres of cotton. (Cal. Coop. Rpt., Dec. 12).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

DOUGLAS-FIR ENGRAVER (Scolytus unispinosus) - CALIFORNIA - Douglas fir poles and standards showing "die-out" in small groups in forest areas in Coast Range in Santa Rosa area. The extended dry spell this season is probably a contributing factor in these cases. (Spharler).

RED TURPENTINE BEETLE (Dendroctonus valens) - CALIFORNIA - Scattered killing of large sugar pine trees in the Chowchilla Mountains in Mariposa County, resulting from previous logging activity. (Wyckoff).

APHIDS - CALIFORNIA - Medium infestation of Essigella californica on pine trees in Lancaster, Los Angeles County, and heavy infestation in Turlock, Stanislaus County. Heavy populations of Prociphilus venafuscus in flight in the Vacaville area of Solano County. (Cal. Coop. Rpt.).

SPIDER MITES - MARYLAND - Eggs, probably of Oligonychus ununguis, heavy on hemlock sent from Severna Park on December 17. (U. Md., Ent. Dept.).

A SCALE (Fiorinia theae) - TEXAS - Attacking holly trees in Fort Bend County. (Garner).

A LACE BUG(Corythucha nicholi) - ARIZONA - Eggs, nymphs and adults collected on chokecherry 10 miles northeast of Payson during September. R. I. Sailer reports as first collection since its description in 1928. (Ash).

A LYCTUS BEETLE (Lyctus linearis) - CALIFORNIA - A heavy infestation of adults occurred in wood sash in Redding, Shasta County. (Cal. Coop. Rpt.).

INSECTS AFFECTING MAN AND ANIMALS

CATTLE GRUBS (Hypoderma spp.) - INDIANA - Larvae found in backs of 17 out of 72 head of Montana feeder calves. Counts ranged from 0 to 13 grubs per infested animal. (Dobson, Matthew).

CATTLE LICE - UTAH - Severely infesting a herd of cattle near Logan, Cache County. (Knowlton).

SHEEP BOT FLY (Oestrus ovis) - KANSAS - Found in 4 lambs examined from Pottawatomie County. (Knapp, Peters).

TROPICAL RAT MITE (Ornithonyssus bacoti) - TEXAS - Annoying residents in Lavaca County. (Hybner).

STORED-PRODUCT INSECTS

KHAPRA BEETLE (Trogoderma granarium) - CALIFORNIA - Medium infestation of a property in Ripley, Riverside County. This is the second infestation in seven months. (Cal. Coop. Rpt.). No specimens were collected in 5 inspections in PENNSYLVANIA, 4 in CONNNECTICUT and one in MASSACHUSETTS. Inspections were made on 29 sites in NEW YORK during November; 23 on Long Island and 6 in Rochester area. Inspections in western and Long Island sections of New York will be completed during December. Other sections of State will be inspected during winter months. (PPC, East. Reg., Nov. Rpt.). During November, 4 inspections were made in ALABAMA, 11 in Orange County, FLORIDA, and 37 in 14 counties in OKLAHOMA. All inspections were negative in Florida and Oklahoma. Determinations not received on specimens submitted from Alabama. (PPC, Sou. Reg., Nov. Rpt.).

FLAT GRAIN BEETLE (Laemophloeus pusillus) - TEXAS - Infesting stored milo in Hays County. (Watson).

MISCELLANEOUS INSECTS

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) - Horry County, SOUTH CAROLINA, found infested for first time during November. Treatment is scheduled as soon as delimiting surveys are completed. Treatments of infested properties were made in 8 States during November on about 41,000 acres. These treatments ranged from a few acres in ARKANSAS to nearly 26,000 in ALABAMA. Surveys were considerably stepped up in all States where extensive treatment programs are to begin in the near future. (PPC, Sou. Reg., Nov. Rpt.).

CARPET BEETLE (*Anthrenus scrophulariae*) - TEXAS - Found in attic of resident in Bexar County. (Wofford).

ELM LEAF BEETLE (*Galerucella xanthomelaena*) - OKLAHOMA - Beetles entering homes in Stillwater area. (Beiberdorf, Dec. 6).

LIGHT TRAP COLLECTIONS

	Pseudaletia unipuncta	Agrotis ypsilon	Feltia subterranea	Heliothis zea
FLORIDA				
Quincy 12/9	1	3		1
LOUISIANA				
Franklin 12/8		2	1	
Baton Rouge 12/12-18	4	13	1	
SOUTH CAROLINA				
Charleston 12/8-14	11	13	6	

SUMMARY OF INSECT CONDITIONS - 1958

ILLINOIS

This report is based on data collected by personnel of the United States Department of Agriculture, Agricultural Research Service, Agricultural Extension Service of the University of Illinois College of Agriculture, Illinois Natural History Survey, Farm Advisers and other cooperators throughout the State.

Highlights (C. E. White): Most important highlights this year were the unusually wet weather in the spring and continuing into early August in many parts of the State and the relatively low populations of field crop insects throughout the season. CLOVER SEED WEEVIL was collected in 1958 for the first time in the State. BLACK CUTWORM and GRAPE COLASPIS severely damaged many fields of corn. The latter was also destructive in soybean fields. STORED-GRAIN INSECTS were more abundant than for several years. ONION MAGGOT was very destructive to some onion plantings in the northeastern area. FOUR-SPOTTED SPIDER MITE was a general pest in apple orchards.

Clover and Alfalfa Insects (C. E. White): PEA APHID (*Macrosiphum pisi*) populations were higher from April to July than in 1957. Heavy rains in July reduced populations to very low levels and very little damage was caused in 1958. SPOTTED ALFALFA APHID (*Therioaphis maculata*) was not found in the State until the middle of October and then only in small numbers in southwestern counties. SWEETCLOVER APHID (*Myzocallidium riehmi*) was also found in small numbers in almost every sweetclover field surveyed. YELLOW CLOVER APHID (*Therioaphis trifolii*) was found in all sections, highest number being 20 per sweep. BLISTER BEETLE populations were extremely low throughout the season. CLOVER LEAF WEEVIL (*Hypera punctata*) larval populations were much lower than 1957 and slightly lower than 1956. The State average for larvae per square foot varied 1.6-3.4. Highest in any one field was 22 per square foot compared with 73 for 1957. However, an estimated 18,205 acres were treated for control in 1958. Profit from treatments was estimated at $18,000. CLOVER HEAD WEEVIL (*Tychius stephensi*) was found in Whiteside County for the first time in 1958, which is the farthest western record for the State. CLOVER SEED WEEVIL (*Miccotrogus picirostris*) was also collected in Whiteside County, the first record for the State. CUTWORMS, mainly *Peridroma margaritosa*, were found in all sections of the State. Populations varied 0-1 per square foot, although one southern field had 7 per square foot. GARDEN FLEAHOPPER (*Halticus bracteatus*) was abundant in southern area clover and alfalfa. GRASSHOPPERS were generally light, 0-5 per square yard. However, on July 1, one southeastern area field had 134 small nymphs and a nearby field had 22 adults per square yard in mid-August. The annual fall survey showed non-economic populations in most of the State, except for small areas in the southeast, a narrow band in the central section and an area in the northern half of the State, which had light populations. LESSER CLOVER LEAF WEEVIL (*Hypera nigrirostris*) larvae infested 100 percent of the clover stems in many fields by early June. MEADOW SPITTLEBUG (*Philaenus leucophthalmus*) nymphs were more abundant in northern Illinois than in 1957. Several fields averaged more than 3 per stem. The annual fall adult survey is noted in CEIR 8(38):84. An estimated 18,570 acres were treated for control in the spring. The estimated profit resulting was $32,500.

Adults of ALFALFA PLANT BUG (*Adelphocoris lineolatus*) and RAPID PLANT BUG (*A. rapidus*) were rather scarce. TARNISHED PLANT BUG (*Lygus lineolaris*) adults were rather light early in the season but built up to fair numbers by mid-June when as many as 15 per sweep were taken in one field. POTATO LEAFHOPPER (*Empoasca fabae*) was relatively light throughout the season. Very little yellowing of alfalfa was noticeable although an estimated 16,544 acres were treated at a profit estimated at $24,800. An estimated 13,696 acres were treated for control of SWEETCLOVER WEEVIL (Sitona cylindricollis) with an estimated profit of $34,500. Populations of PREDATORY INSECTS were approximately the same in 1958 as in 1957. Although this was considered to be a relatively light year for insects, the following estimates have been made. These estimates are based on actual field observations this year and on production figures from the 1954 census. Seven and one-half percent of all clover and alfalfa fields in the State probably would have benefited by applications of insecticide to the forage crop and 100 percent of the red clover seed fields would have benefited from insecticide treatments. The total loss in hay production is estimated at 47,301 tons worth $1,135,224. The cost of treating to prevent this loss is estimated at $375,000. Therefore, the estimated profit if treatments had been applied is $760,224. Of this amount it is estimated $75,300 was actually collected due to the treatments that were applied. Also an estimated 43,815 bushels of red clover seed was lost due to insects. This was valued at $1,095,375. Cost of treating the seed fields was estimated at $255,370. This leaves an estimated profit of $840,000 which could have been collected had all fields been treated.

Corn Insects (C. E. White): BILLBUGS damaged 60 percent of the plants in one field in southern Illinois and were relatively scarce elsewhere. CHINCH BUG (Blissus leucopterus) numbers were lower than for several years. It is estimated that only 1000 acres of small grain and corn were treated. CORN EARWORM (Heliothis zea) was very scarce until August at which time larvae averaged 20-30 per 100 ears in some southern fields. Very late corn was heavily infested in late August and September. A survey in September showed an estimated loss of 0.3 percent of corn produced for grain in the northern three-fourths of the State and a loss of 1 percent in the southern one-fourth, due to corn earworm, or an estimated loss of 233,038 bushels in the entire State. The value was approximately $242,360 based on present market price. CORN FLEA BEETLE (Chaetocnema pulicaria) was relatively low, most fields having less than 1 beetle per plant during May and June. However, some fields had as many as 6 per plant. CUTWORMS, mainly Agrotis ypsilon, were very destructive in some areas and many fields had to be replanted. An estimated 103,385 acres were treated for control. The profit due to these treatments was estimated at $516,925. EUROPEAN CORN BORER (Pyrausta nubilalis) was relatively low in 1958. A first generation survey in 18 counties showed an average of 11.9 borers per 100 stalks and a second generation survey in the same counties showed an average of 90.4 borers per 100 stalks. This is a ratio of first to second generation borers of 1 to 7.6. Approximately 0.7 percent (59,273 acres) of the corn fields in the State would have benefited by treatments to control first generation corn borers. Also 2.5 percent (216,773 acres) would have shown a profit from treatment for second generation borers. An estimated 37,093 acres were treated for control of first generation and 13,731 acres for second generation borers. The profit from these treatments was estimated at $203,296. The fall survey showed an average of 73 borers per 100 corn stalks (based on average of 43 counties) or slightly more than the 66 per 100 stalks found in 1957. FALL ARMYWORM (Laphygma frugiperda) damaged some late planted corn in southern section before the corn tasseled and also by feeding in ear tips. GRAPE COLASPIS (Colaspis sp.) larvae damaged many corn fields in western and west-southwestern sections and scattered fields elsewhere. Colaspis were more abundant in 1958 than for several years. GRASSHOPPERS did very little damage to corn. The one exception was a southeastern field which averaged 8 Melanoplus differentialis feeding on rows 13 and 14 in mid-August. The first 8 rows had an estimated 80 percent of the leaf surface removed, all the silk was removed from ear tips and shucks and kernels eaten half way down the side of many ears. ROOTWORMS (Diabrotica spp.) damaged several fields of corn, especially in central Illinois. WIREWORMS damaged a few widely scattered fields. YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) was reported to have damaged 90 percent of corn plants in one southwestern field. An estimated 780,383 acres were treated at an estimated profit of $1,950,957.

Small Grain Insects (C. E. White): ARMYWORM (Pseudaletia unipuncta) occurred throughout the State in small numbers and in a few localized areas became very destructive to wheat and barley. Parasites and disease were abundant in most areas and played a large part in preventing a serious outbreak. An estimated 47,506 acres were treated for control, resulting in a profit estimated at $95,012. CHINCH BUG was very scarce throughout the season. ENGLISH GRAIN APHID (Macrosiphum granarium) was present throughout the State. Populations ran as high as 50 per sweep in wheat and oats and 22 per head of wheat but apparently caused no damage. HESSIAN FLY (Phytophaga destructor) continued its downward trend in 1958. The annual survey showed a State average of 2.91 puparia per 100 tillers compared with 6.28 in 1957 and 15.49 in 1956. WHEAT JOINTWORM (Harmolita tritici) infested an average of 6.13 percent of the wheat stems in the State.

Soybean Insects (C. E. White): Populations of BEAN LEAF BEETLE (Cerotoma trifurcata), GREEN CLOVERWORM (Plathypena scabra), GRASSHOPPERS (Melanoplus spp.) and WHITE GRUBS (Phyllophaga spp.) were all rather scarce and caused very little damage. GRAPE COLASPIS (Colaspis sp.) larvae, however, caused considerable damage to soybeans in western and west-southwestern areas.

Fruit Insects (Ronald Meyer): Moderate temperatures and little rainfall during the hatch of ROSY APPLE APHID (Anuraphis roseus) lead to serious infestations, especially in the southern third of the State. APPLE APHID (Aphis pomi) was numerous and in a few orchards became abundant enough to curl the leaves of most terminal growth and honeydew caused blackened leaves. During early season, shortly before bloom, rainfall was regular and generous and tended to depress an average carry over of RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) and CODLING MOTH (Carpocapsa pomonella). There was very little difference in stage of development from south to north during early season growth. However, there was a scattering of serious red-banded leaf roller infestation in late summer. Prevailing dry weather during late July and early August coupled with a cessation of spraying, allowed the third brood to build up sufficiently to cause destructive populations during the fourth brood. TARNISHED PLANT BUG (Lygus lineolaris) and STINK BUGS were plentiful during early season on peaches. PLUM CURCULIO (Conotrachelus nenuphar) was normal in southern two-thirds of State with generally good control maintained by growers, but was unusually numerous in several northern areas where considerable damage resulted. APPLE MAGGOT (Rhagoletis pomonella) adults were very numerous during mid-August in northern Illinois and several commercial orchards were infested at that time. STRAWBERRY LEAF ROLLER (Ancylis comptana fragariae) was not serious and ORIENTAL FRUIT MOTH (Grapholitha molesta) was generally light in 1958. MITE damage varied from practically none to very destructive. PHYTOPHAGOUS MITES continued to be a major problem for apple growers. Winter egg carry over of EUROPEAN RED MITE (Panonychus ulmi) populations varied from zero to very dense. FOUR-SPOTTED SPIDER MITE (Tetranychus canadensis) was present in all apple orchards and one peach orchard examined in southern and west central areas along the Mississippi River. This is the first year this species has been a general pest although it was destructive in a commercial orchard in 1955. The first record of the mites in 1958 was taken May 26 at Carbondale. On June 28, a population averaged 2,498 mobile mites and 2,986 eggs per 100 leaves, but damage did not become generally noticeable until the latter half of July and early August. With a high population going into the winter, damage may show up earlier in 1959. No destructive populations of TWO-SPOTTED SPIDER MITE (Tetranychus telarius) were found in southern areas although several were found in northern areas.

Truck Crop Insects (W. H. Luckmann): With a few exceptions insect infestations on truck and canning crops were generally below normal. ONION MAGGOT (Hylemya antiqua) injury was very severe to onions grown for sets and green bunching onions. Maggots were apparently resistent to certain insecticides. BEET LEAFHOPPER (Circulifer tenellus) was very damaging on horseradish in the East St. Louis area. ASPARAGUS BEETLE (Crioceris asparagi) and SPOTTED

ASPARAGUS BEETLE (*C. duodecimpunctata*) were light except locally in northern areas. CORN EARWORM and/or TOMATO FRUITWORM (*Heliothis zea*) populations were below normal. EUROPEAN CORN BORER (*Pyrausta nubilalis*) caused little damage to canning corn. SAP BEETLES (*Carpophilus* spp.) were locally heavy only in southwestern and northeastern sections. CORN LEAF APHID (*Rhopalosiphum maidis*) was very abundant but apparently caused no damage. CORN FLEA BEETLE (*Chaetocnema pulicaria*) populations were below normal and only damaging in usual southern localities. STRIPED CUCUMBER BEETLE (*Acalymma vittata*) and SPOTTED CUCUMBER BEETLE (*Diabrotica undecimpunctata howardi*) appeared in fields 7-10 days later than normal and caused only moderate damage. SQUASH BUG (*Anasa tristis*) was rarely present in economic numbers. Damage by MELON APHID (*Aphis gossypii*) was light. No treatments were needed for PEA APHID (*Macrosiphum pisi*) on canning peas, which is unusual. POTATO LEAFHOPPER (*Empoasca fabae*) was less abundant than in past years. IMPORTED CABBAGEWORM (*Pieris rapae*) and CABBAGE LOOPER (*Trichoplusia ni*) were normal. DIAMONDBACK MOTH (*Plutella maculipennis*) was the most prevalent Lepidoptera on cabbage. CUTWORM damage was common but not severe in the spring. Damage by the BEAN LEAF BEETLE (*Cerotoma trifurcata*) and MEXICAN BEAN BEETLE (*Epilachna varivestis*) was conspicuous but not extensive.

Forest, Ornamental and Shade Tree Insects (L. L English, Robert Snetsinger, and C. E. White): EASTERN TENT CATERPILLAR (*Malacosoma americanum*) began emerging in northern part of State about April 23. Tents and defoliation were very common in many areas later in the season. PINE NEEDLE SCALE (*Phenacaspis pinifoliae*) was abundant on Scotch pine near Rockford, in mid-April. A few SPIDER MITES were also present. CATALPA SPHINX (*Ceratomia catalpae*) almost completely defoliated many catalpa trees in east-southeast and southeast sections of the State. YELLOW-NECKED CATERPILLAR (*Datana ministra*), not as abundant as in 1957, was still quite noticeable in some areas. WALNUT CATERPILLAR (*Datana integerrima*) partially to completely defoliated many black walnut trees in northern half of State. FALL WEBWORM (*Hyphantria cunea*) nests were very conspicuous in many parts of the State. BAGWORM (*Thyridopteryx ephemeraeformis*) appeared later than usual and, although not as abundant as in the past few years, severely damaged many untreated trees. COTTONY-MAPLE SCALE (*Pulvinaria innumerabilis*) was more abundant than usual. MIMOSA WEBWORM (*Homadaula albizziae*) was found at Mounds, Pulaski County. MAPLE BLADDER-GALL MITE (*Vasates quadripedes*) was fairly numerous. *Kermes* spp. were abundant on oak in northern Illinois.

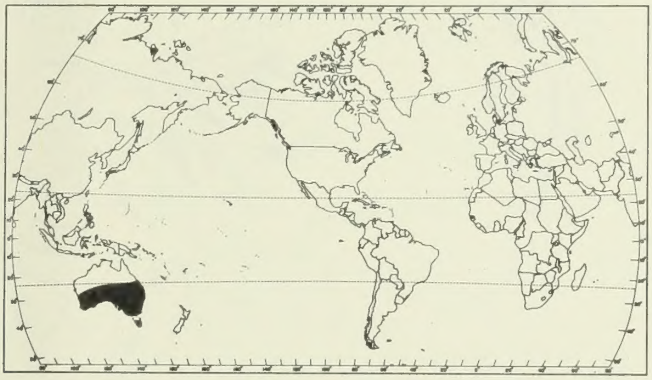
Stored-Grain Insects (Stevenson Moore): Stored-grain insects were more abundant in 1958 than for several years, due probably to the fact that grain went into bins with a higher moisture content than usual. INDIAN-MEAL MOTH (*Plodia interpunctella*) was present in all untreated, and many treated bins of 1958 wheat within 6 weeks after harvest in the southern half of the State. In 7 untreated bins of wheat in this area insects averaged 18 per 2-quart sample. The following were found in these samples and are listed in descending order of abundance: INDIAN-MEAL MOTH, a FOREIGN GRAIN BEETLE (*Ahasverus advena*), RUSTY GRAIN BEETLE, SAW-TOOTHED GRAIN BEETLE, a HAIRY FUNGUS BEETLE (*Typhaea stercorea*), FLAT GRAIN BEETLE, RED FLOUR BEETLE, CADELLE BEETLE and RICE WEEVIL. On many farms feed storage rooms or old feed sacks yielded high numbers of YELLOW MEALWORM (*Tenebrio molitor*) and DARK MEALWORM (*T. obscurus*). Grain insects of one kind or another were found in various locations on all farms inspected. Thirty-five farms were involved in this survey.

INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

APPLE THRIPS* (Thrips imaginis Bagnall)

Economic Importance: Outbreaks of this species, which is indigenous to Australia, cause extensive damage to pears, apples and other fruits during some years. Sometimes attacks by T. imaginis will completely destroy the setting of young fruits. The attack was so severe in Victoria during 1926 that all fruit crops, including strawberries and cane fruits, were a complete loss. T. imaginis is chiefly a pest in the spring and early summer, but severe outbreaks may occur in the autumn. As many as 2,800 per rose blossom have been found in Sydney during October. Damaging populations depend largely on meteorological conditions. If weather is unfavorable during October and November, thrips will not be serious even if large numbers survive the previous winter. A warm, wet, autumn favors a buildup, and often immense swarms will appear when these conditions are encountered. The species does not appear in damaging numbers in Tasmania.

Distribution: Occurs throughout southern Australia and Tasmania.



General Distribution of Thrips imaginis

Hosts: Attacks the flowers of many plants; most serious on deciduous fruits though occasionally it becomes serious on other crops such as tomatoes and strawberries.

Life History and Habits: The adults may be found throughout the year in South Australia, but populations fluctuate according to climatic conditions. Egg laying occurs through the female's life span, the average number varying from 186 to 251. Eggs are laid in the tissues of the flowers, including the stamens and pistils, and occasionally on young tender leaves of host plants. Newly hatched nymphs feed on epidermal cells causing a "browning" of the petals and destruction of the stamens and pistils. During an infestation year, 150 individuals may be present in each blossom. After passing through the second nymphal stage, the insect leaves the plant and enters the soil to pupate. Immature development varies considerably, the average being about 10 to 12 days at 23° C. Diapause is passed in the pupal stage in the soil or in the adult stage in sheltered conditions. Activity increases rapidly during the first warm days in the spring. The extent of spring peaks depends upon the extent of the previous autumn population, survival during the winter and character of the prevailing spring weather. Several other species of thrips inhabit blossoms in association with *T. imaginis*; particularly *T. tabaci* which closely resembles this species.

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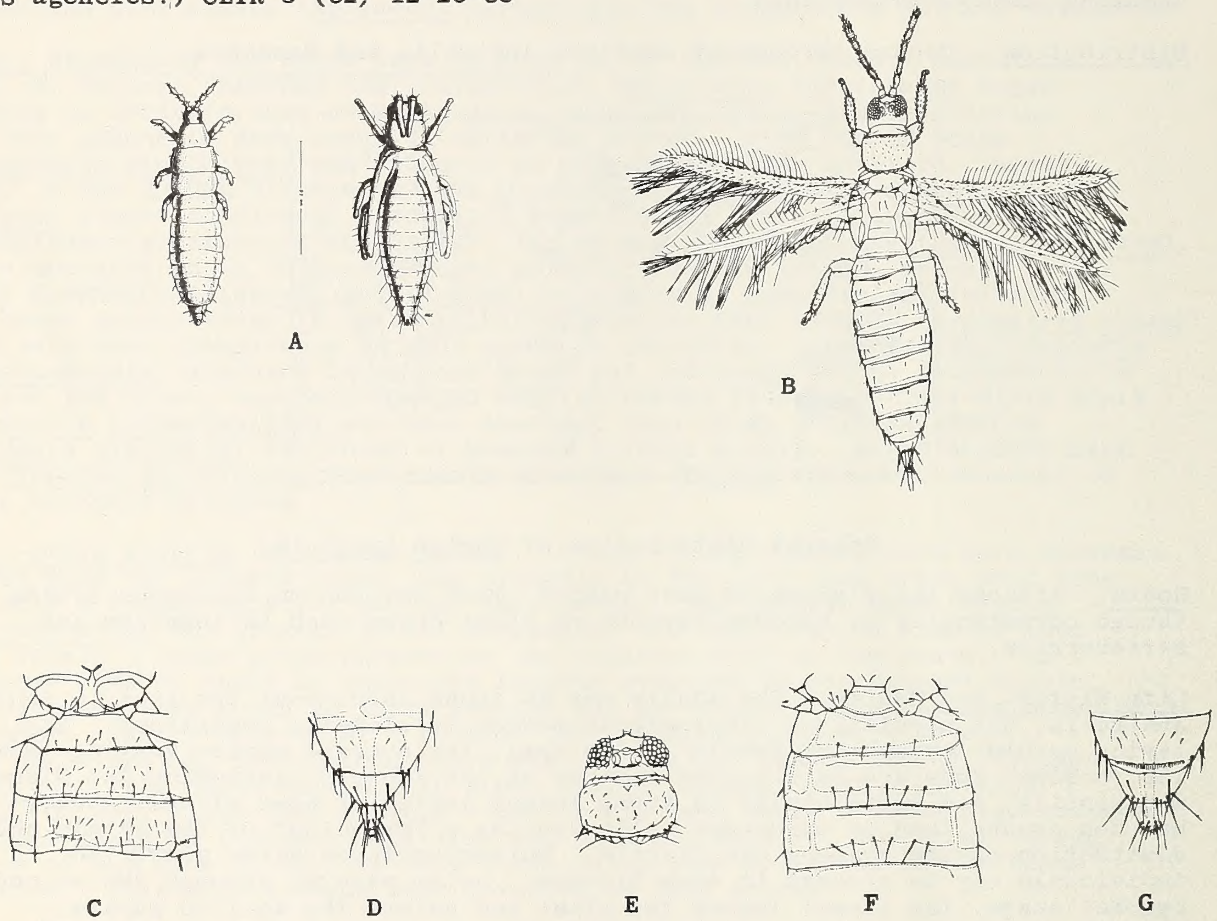
*Also called plague thrips. (Thripidae, Thysanoptera)

Description: Adult female about 1 mm. long and about .25 mm wide at thorax. Anterior portion of body golden-brown with reddish tinge; posterior area brownish-yellow to darker brown. Newly emerged adults yellowish. Male smaller and lighter in color than female; abdomen pale-yellow. *T. imaginis* adults may be separated from *T. tabaci* as follows: *T. tabaci* have only primary setae on abdominal sternites 2-7, consisting of row of 6 setae across posterior margin of segment. *T. imaginis* has primary setae and in addition an irregular accessory row of setae across the middle of sternites 2-7 (often only 1 or 2 on sternite 2). Accessory setae are finer and shorter than primaries. Ocellar crescents bright red in *T. imaginis* and gray in *T. tabaci*. Gray color in *T. tabaci* often difficult to see because of orange internal pigment behind, but pigment usually present elsewhere in body. No similar pigment in body of *T. imaginis* like that in ocellar crescents. Nymphs of *T. imaginis* generally orange-yellow and *T. tabaci* lemon-yellow. (Prepared in Plant Pest Survey in cooperation with other ARS agencies.) CEIR 8 (52) 12-26-58



Nymph, Pupa (A) and Adult (B) of *T. imaginis*. Anterior Abdominal Sternites (C), Posterior Abdominal Tergites (D) and Head and Prothorax (E) of *T. imaginis*. Anterior Abdominal Sternites (F) and Posterior Abdominal Tergites (G) of *T. tabaci*.

Figures (except map): Adult, head, prothorax, sternites and tergites from Vevers Steele, H. 1934. Austral. Council for Sci. and Indus. Res. Pamph 54, 59 pp. Nymph and Pupa from Davidson, J. 1936. South Australia Dept. Agr. Jour. 39(7): 930-939.

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